

REMARKS

In an Office Action dated September 03, 2003, all of the pending claims 1-23 are rejected on prior art grounds and the title of the invention is objected to. In reply, Applicant herein amends claim 14, adds new claims 24-29, amends the title of the invention, and submits the present Remarks; entry and consideration hereof are respectfully requested.

The Examiner's particular concerns, as set forth in the Action, are now addressed in turn.

The Examiner objects to the title of the invention as not being properly descriptive. In reply, the title is herein amended to address the Examiner's concerns. Reconsideration and withdrawal of the objection is requested.

Claims 1-4, 6, 10, and 20 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,304,222 to Smith et al. At page 2 of the Action, the Examiner states that Smith teaches each and every limitation of claim 1, including an *electromagnetic resonance chamber*.

In reply, Applicant submits that the reference, in fact, fails to teach or even suggest an electromagnetic resonance chamber, as recited in claim 1. Thus, Smith fails to disclose, explicitly or inherently, all of the recited limitations of claim 1. Accordingly, the rejection is improper and may not be maintained.

Claim 1 recites a communication device comprising, *inter alia*, a housing enclosing a loudspeaker and at least part of an antenna, the loudspeaker including an electromagnetic resonance chamber, and the antenna including an electromagnetic resonance chamber, wherein the acoustic resonance chamber is completely or partly located within the electromagnetic resonance chamber.

In the Office Action, the Examiner relies on Figure 2b of Smith for an alleged teaching of Applicant's recited electromagnetic resonance chamber. This is a misreading of the Smith. The reference, to the contrary, does not disclose such chamber.

Smith teaches a radio communications handset 1 incorporating an internal antenna arrangement 2, as shown in Figure 1. The handset 1 includes a speaker unit 10 having a volume of free space V formed thereabout. The free space V is particularly described as being utilized for "acoustic enhancement". Col. 3, lines 50-65. The antenna arrangement 2 consists of a ground plane 4 and a radiating element 3 extending from a radio frequency feed point 8. *Id.* The radiating element is specifically arranged in a curved manner to fit around the peripheral edges of the acoustic enhancing volume of free space V. *Id.* The reference disposes portions of the antenna arrangement 2 (the radiating element 3 and ground plane 4) in the acoustics volume V to promote miniaturization of the hand set 1. Col. 4, lines 22-25.

That is, free space V within the handset 1 of Smith is specifically and solely dedicated to *acoustic enhancement* of the speaker unit 10. The space V clearly does not serve as an electromagnetic resonance chamber, as recited in Applicant's claim 1. Smith does not even disclose any walls, etc. to delimit such electromagnetic resonance chamber. Instead, the antenna arrangement 2 is composed of the antenna element consisting of a piece of plated wire bent into a series of bends (col. 5, lines 9-10) and the ground plane 4. Surely, these elements are not capable of delimiting the electromagnetic resonance chamber recited in claim 1.

In the outstanding rejection, the Examiner particularly relies on Figure 2b of Smith for the teaching of the claimed electromagnetic resonance chamber. However, it is noted that the Examiner does not point out or describe *where* in the Figure and/or specification Smith specifically teaches the claimed limitation. Nonetheless, Applicant submits that neither Figure 2b, nor the remaining Figures, nor the specification, teach or suggest the electromagnetic resonance chamber. Particularly, Figure 2b of Smith only illustrates the existence of capacitive elements C_{gn} between the wire element 3 and the ground plane 4. Col. 4, lines 45-50. The drawing does not, in any respect, teach or

suggest an electromagnetic resonance chamber nor combining such chamber with an acoustic resonance chamber, as recited in claim 1.

Accordingly, Smith fails to teach each and every limitation of claim 1, thus, the outstanding anticipation rejection based upon Smith is improper and may not be maintained; reconsideration and withdrawal thereof are respectfully requested. Claim 1 is not further rejected or objected to and is therefore allowable to Applicant.

Claims 2-4, 6, 10, and 20 variously depend from allowable claim 1 and are thus correspondingly allowable; withdrawal of the outstanding novelty rejections is requested.

Claims 5, 7-9, 11-19, and 21-23 are rejected under 35 U.S.C. §103(a) as being obvious with respect to the combination of Smith and U.S. Patent No. 5,953,414 to Abraham et al.

Concerning claims 5 and 7-9, it is noted that these claims variously depend from allowable claim 1. Thus, claims 5 and 7-9 are correspondingly allowable. Accordingly, withdrawal of the relevant §103 rejections is requested.

Concerning claims 11-19 and 21-23, Applicant submits that *prima facie* obviousness does not exist with regard to the Examiner's proposed combination of the cited references. Accordingly, the rejections may not be maintained.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference(s) must teach or suggest all the claim limitations. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1996).

The Smith and Abraham references, taken singularly or in combination, fail to teach or suggest all of the limitations recited in the rejected claims. Particularly,

independent claims 11, 17, and 18 include all of the limitations of allowable claim 1 and include additional limitations. Abraham is directed to a piezo-electric speaker capsule for a telephone handset. The reference makes no disclosure concerning an antenna nor any type of electromagnetic resonance chamber. Clearly, Abraham does not remedy the deficiencies of Smith discussed herein above. That is, neither Smith nor Abraham teach or even suggest an electromagnetic resonance chamber as recited in claims 1, 11, 17, and 18. Thus, even if the Abraham and Smith references are combined, as suggested by the Examiner, such combination does not produce the claimed invention since all of the recited limitations are not present in the references.

As mentioned, claim 11 recites all of the limitations of claim 1 and additional limitations including, *inter alia*, the loudspeaker and acoustic resonance chamber being separated by means of at least one electromagnetic screen and the same being acoustically connected through the electromagnetic screen by means of at least one acoustically coupling means.

For these elements of claim 11, the Examiner relies on the teaching of Abraham. At page 3 of the Office Action, the Examiner asserts that the reference teaches a speaker 3, 4 connected to an acoustic chamber through a circuit board 11 by an acoustic coupling means 7, 8. The Examiner describes the acoustic chamber as being the space above the circuit board 11 as shown, presumably, in Figure 4. To the contrary, however, this space is not an acoustic chamber. The space is, instead, essentially dead space the volume of which Abraham ultimately seeks to reduce by disposing the circuit board 11 directly on a wall 18. Col. 3, lines 20-25. Further, the reference numerals 7, 8 of Abraham indicate a hole and a fabric, respectively, designed to allow micro-leaks through the wall 18 to attenuate the resonant peak. Col. 3, lines 8-10 and 38 through col. 4, line 2. Clearly, the hole 7 and fabric 8 are not equivalent to the acoustically coupling means of claim 11.

Thus, Abraham and Smith, taken singularly or in combination, fail to teach or suggest all of the limitations of claim 11. Accordingly, prima facie obviousness does not exist concerning claim 11; reconsideration and withdrawal of the outstanding §103

rejection is respectfully requested. Since claim 11 is not further rejected or objected to, claim 11 is allowable to Applicant.

Claims 12-16, 21, 22 variously depend from allowable claim 11. Therefore, these claims are correspondingly allowable; withdrawal of the outstanding rejections is requested.

As mentioned, claim 17 includes all of the limitations of allowable claim 1 as well as additional limitations, including, *inter alia*, at least a part of the acoustic resonance chamber being located at a distance from the loudspeaker. In the Office Action, the Examiner states that Abraham discloses an acoustic resonance chamber above item 11 as shown in the Figures and that such chamber is at a distance from a speaker 3, 4. However, as discussed herein with reference to claim 11, the volume above the circuit board 11 is not an acoustic resonance chamber. To the contrary, Abraham discloses spatial volumes 16, 17 formed about a sound source 3, 4. These volumes 16, 17 effect sound propagation (col. 3, lines 3-10) and are clearly not at a distance from the sound source 3, 4.

Thus, Abraham and Smith, taken singularly or in combination, fail to teach or suggest all of the limitations of claim 17. Accordingly, prima facie obviousness does not exist concerning claim 17; reconsideration and withdrawal of the outstanding §103 rejection is respectfully requested. Since claim 17 is not further rejected or objected to, claim 17 is allowable to Applicant.

Claim 19 is dependent upon allowable claim 17. Thus, claim 19 is correspondingly allowable; withdrawal of the relevant §103 rejection is requested.

As mentioned, claim 18 includes all of the limitations of claim 1 and additional limitations, including, *inter alia*, the loudspeaker and the acoustic resonance chamber being connected by at least one acoustic coupling means. Again, with respect to claim 18, the Examiner relies upon Abraham and cites the space above the circuit board 11 as being equated to Applicant's acoustic resonance chamber and further identifies 'acoustic coupling means' 7, 8 as reading on Applicant's recitation. However, as discussed above

in detail, the volume above the circuit board 11 in Abraham is not an acoustic resonance chamber and the hole 7 and fabric 8 of the reference do not even approximate Applicant's claimed acoustic coupling means.

Thus, Abraham and Smith, taken singularly or in combination, fail to teach or suggest all of the limitations of claim 18. Accordingly, *prima facie* obviousness does not exist concerning claim 18; reconsideration and withdrawal of the outstanding §103 rejection is respectfully requested. Since claim 18 is not further rejected or objected to, claim 18 is allowable to Applicant.

Claim 20 is dependent upon allowable claim 18. Thus, claim 20 is correspondingly allowable; withdrawal of the relevant §103 rejection is requested.

As described above, the Abraham and the Smith reference fail to teach or suggest all of the limitations of claims 5, 7-9, 11-19, and 21-23, thus *prima facie* obviousness is not found in this respect. Further, there is no motivation to combine the references as proposed by the Examiner because, due to the missing claim limitations discussed herein above, such combination would not result in the claimed invention. Further, there is no likelihood of success because the invention can not be successfully formed by combining the Abraham and Smith references. Accordingly, for at least all of these reasons, *prima facie*, obviousness does not exist with respect to claims 5, 7-9, 11-19, and 21-23.

Newly added claims 24-29 contain no new matter as support is found throughout the originally filed specification, for example, at page 3, line 32 through page 4, line 23, and at Figures 5 and 6. Claims 24-26 variously depend from allowable claim 1 and are thus correspondingly allowable. Claims 27-29 variously depend from allowable claim 11 and are thus correspondingly allowable. Consideration and allowance of claims 24-29 is respectfully requested.

All of the outstanding objections and rejections are herein traversed. Claims 1 – 29 are now allowable to Applicant. Applicant thus respectfully requests withdrawal of all objections and rejections and prompt issuance of a Notice of Allowance.

The Examiner is invited to contact Applicant's attorneys at the below-indicated telephone number regarding this Reply or otherwise concerning the present application.

Applicant hereby petitions for any necessary extension of time required for consideration and entry of the present Reply.

Please charge any required fees for this Reply, or otherwise concerning the present application, to Deposit Account No. 06-1130 maintained by Applicant's attorney.

Respectfully submitted,

CANTOR COLBURN LLP

By:



Daniel F. Drexler
Registration No. 47,535
CANTOR COLBURN LLP
55 Griffin Road South
Bloomfield, CT 06002
Telephone: 860-286-2929
Facsimile: 860-286-0115
Customer No. 23413

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